

METHOD AND APPARATUS FOR REDUNDANT  
TRANSMISSION OVER TDMA OPTICAL NETWORKS

ABSTRACT OF THE DISCLOSURE

Communication between a burst manager and plural remote terminals over a  
5 first passive optical network (PON) and a second PON, with each PON having a  
downstream portion and an upstream portion, includes transmitting a common  
synchronization signal from the burst manager to the plural remote terminals over both  
downstream PON portions and transmitting burst data from the plural remote terminals  
over both upstream PON portions to the burst manager. The burst data for each remote  
10 terminal is delayed on the first and second PONs by corresponding first and second  
delays. The first delay includes a first ranging delay and the second delay includes a  
second ranging delay wherein the first and second ranging delays for each remote  
terminal are adjusted with respect to the common synchronization signal such that the  
burst data for any particular remote terminal transmitted on the first PON arrives at the  
15 burst manager simultaneously with the burst data for that particular remote terminal  
transmitted on the second PON in the same relative timeslot position.